





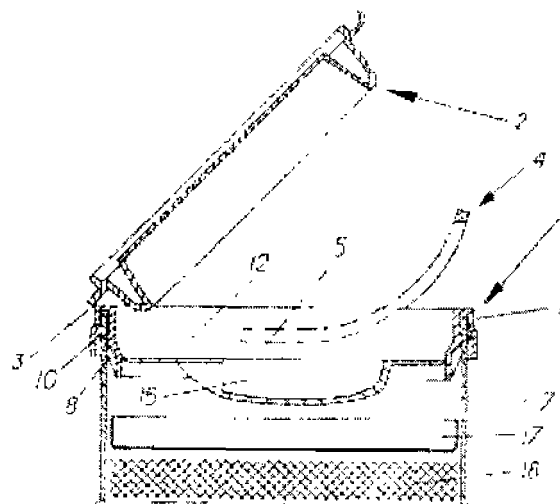


**VOLUMINOUS AND/OR HEAVY CONTAINERS HAVING A RECLOSABLE CONTAINER****Publication number:** WO9317920 (A1)**Publication date:** 1993-09-16**Inventor(s):** CHRISTENSSON PETER [SE]; BERG GUNNAR [SE];  
CHRISTENSSON LARS [SE]; MOREN STEFAN [SE]**Applicant(s):** AKERLUND & RAUSING LICENS AB [SE]**Classification:****- international:** B65D43/16; B65D50/04; B65D51/24; B65D43/16; B65D50/00;  
B65D51/24; (IPC1-7): B65D5/12**- European:** B65D15/08; B65D43/16C4; B65D50/04F; B65D51/24H2**Application number:** WO1992SE00736 19921022**Priority number(s):** SE19920000677 19920305**Also published as:** SE9200677 (L) SE507647 (C2)**Cited documents:** WO8910873 (A1) US4852792 (A) GB2026427 (A) EP0410938 (A1) EP0312513 (A2)

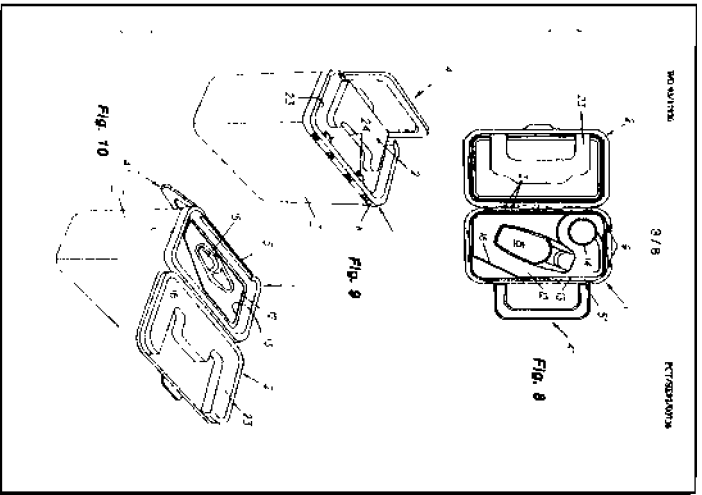
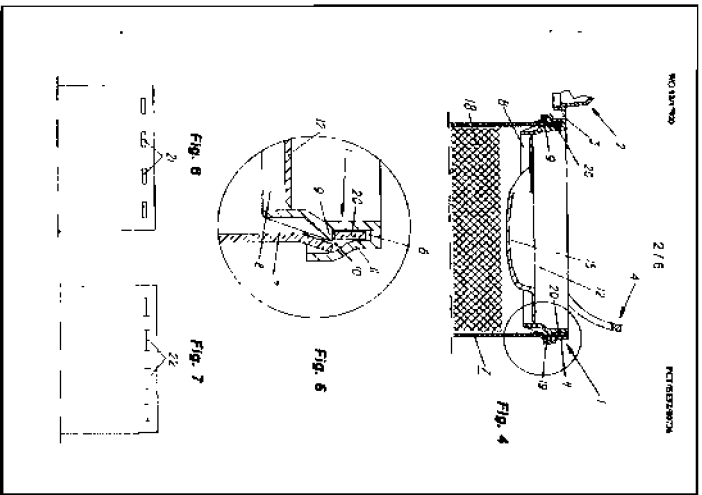
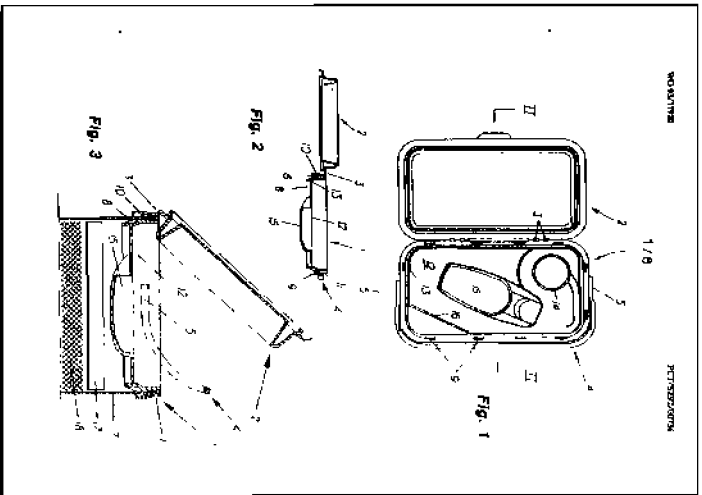
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**Abstract of WO 9317920 (A1)**

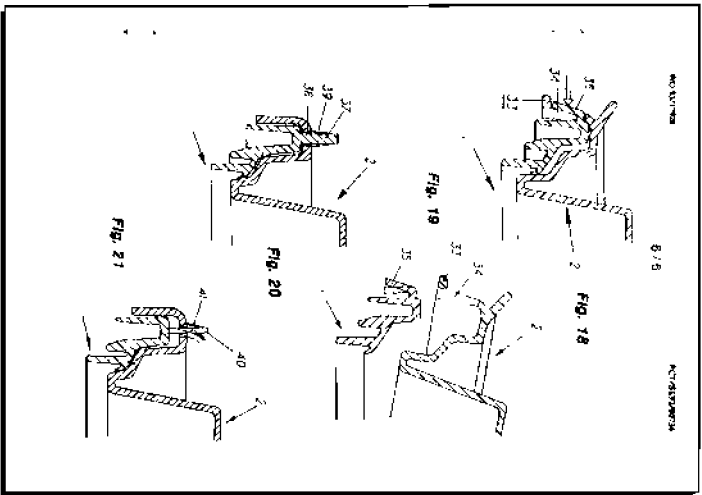
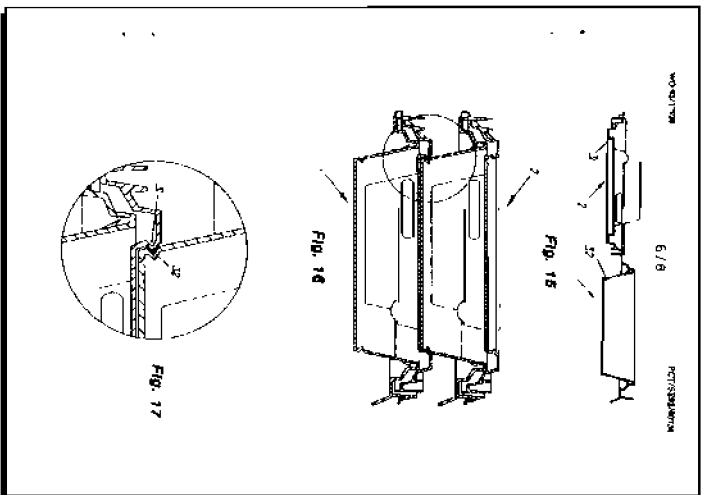
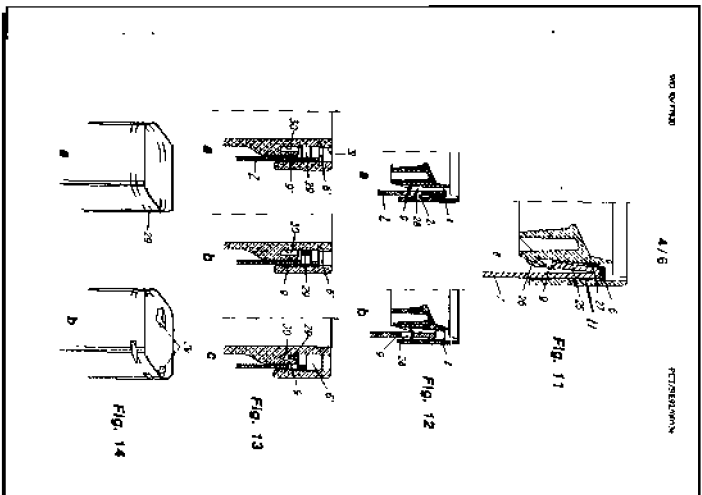
Container for voluminous and/or heavy goods, which container is formed with a reclosable top comprising a downwards open lid frame part (1) into which the upper edge of a transversally open container sleeve (7) can be introduced, and a reclosable lid part (2) which is hinge connected to the frame part (1) and which, in closed condition, provides at least a powder-proof closing of the container, and in which the lid frame part (1) and the container sleeve (7) are formed with cooperating means (9, 19) for providing a safe mechanical joint between the two parts. The frame part (1) may be formed with an upwards foldable carrying handle (4) which, in its fold down rest position, can form a lock against unintentional opening of the lid (2), and the frame and lid parts (1, 2) can be formed with another type of single or double acting "kid-proof lock" for preventing unintentional opening of the lid (2).



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Drawing pages of WO9317920 A.



## **VOLUMINOUS AND/OR HEAVY CONTAINERS HAVING A RECLOSABLE CONTAINER**

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Description of **WO 9317920 (A1)**

### **VOLUMINOUS AND/OR HEAVY CONTAINERS HAVING A RECLOSABLE CONTAINER TOP**

The present invention generally relates to a container having a reclosable container top or container lid of the type which comprises

- a lid frame having a downwards open groove, in which an even, cross cut upper edge of a container is arranged to be introduced and to be fixedly connected,
- and reclosing lid which is hinge connected, to said lid frame, and which in closed condition makes it possible to close the container under at least powder proof conditions, and which in open condition makes it possible to successively portion out the packed goods.

Many different types of reclosable container tops of the above mentioned type are known in the art, for instance by patentee's own patents US 4,736,870, US 4,883,192 or 5,050,763. Most container tops of this type are designed for use on relatively small and relatively light weight containers, for instance containers having a volume of not more than 1-2 liter and a weight of not more than 1-2 kg. The lid frame of the container reclosing top generally is secured to the upper edge of the container by means of glue, wax, so called "hot-melt" or a similar means which is applied in the frame groove and on the upper edge of the open container sleeve.

In connection with packing of certain types of goods like detergents, dish washing-up powder and other goods which are consumed in relatively large amounts it is normally desired to make use of large containers which may contain 5-10 liter and which may have weights of up to 10 kg or even more. Such goods generally have been packed in bags or in containers which after having once been opened have to be left open for successive portioning out the packed goods. Containers for such goods generally need not be liquid or gas proof, it is often quite sufficient that the containers are powder proof. For making a simple handling of the containers of the said type possible the containers often are formed with some type of carrying handle which is connected, at a suitable place, to the cardboard, plastic or paper container.

It is generally unwise to leave containers for many types of products open, in particular containers containing detergent, washing-up powder and similar products, since kids may thereby easily get in contact with goods which is, in many cases, unhealthy and poisoning. There is also a risk that undue objects fall down into the open container, or that water drops into the container, which water may make the product form lumps or may damage the product in other ways, etc.

Therefore, there has been a wish for a container for large volume type products and/or for heavy weight type products, which container has any type of reclosing lid, and whereby the container and the reclosing arrangement are so safely connected to each other that there is no risk that the parts become disconnected from each other. It is also a strong wish that the container and the reclosing arrangement are "kid safe", whereby is meant that kids can not open the container, or kids only with difficulty can open the container. It may also be good that the complete container has a carrying handle which is thereby preferably connected to or integral with the frame by means of which the reclosable top is mounted on the upper edge of the container.

It may thereby be difficult to obtain a sufficiently stable connection and locking between the container and the reclosable top. A glue joint or a hot-melt joint of the type which is common for small and light weight containers generally does not give a sufficient strength and safe connection between the container and the reclosable top, and with such joining methods there is a risk that the reclosing top becomes released from the container body, especially upon careless handling of the container and this is fully unacceptable.

In a large and/or heavy container having a reclosable top of the above mentioned type it is necessary that there is a safe joint, in particular mechanical joint between the container body and the reclosing top or the

connection frame thereof. If desired or considered necessary the mechanical joint can be supplemented with a glue joint.

Thus, the invention relates to a container for voluminous and/or heavy goods, which container has a reclosable top comprising a downwardly open lid frame, into which the upper edge of an open, cross cut container can be introduced and secured, a relocating lid which is hinge connected to the lid frame and which in closed state gives at least a powder proof closing of the container, and which top is formed with a "kid proof lock" or at least a lock for preventing undue handling of the packed goods.

According to the invention the lid frame and the container body are formed with cooperating means for providing a safe, mechanical joint between the container body and the reclosable top or lid.

In a preferred embodiment of the invention the lid frame is also formed with a carrying handle which is preferably rotatably connected or hinge connected to the lid frame and which can be rotated between a fold-down transport and rest position and a fold-up carrying position.

In a suitable embodiment of the mechanical lock the lid frame is formed with outwardly projecting, point formed barbs extending radially outwards some distance outside the downwards directed groove for the container body, and which barbs are arranged to penetrate certain parts of the container body material thereby providing a barb like locking means between the lid frame and the container body at the final stage of connecting the reclosing lid to the container body. For facilitating the penetration of the barbs through the container sides said sides may be formed with grooves, recesses, slots, borders of material etc., which as to form, size and location correspond to those of the barbs of the lid frame.

Further characteristics and advantages of the invention will be evident from the following detailed description, in which reference will be made to the accompanying drawings.

In the drawings figure 1 shows a reclosing top for use on a container according to the invention and illustrated with the lid fully fold up, that is the position in which the lid with the lid frame is manufactured. Figure 2 shows a cross section along line II-II of the reclosable top of figure 1.

Figure 3 shows a vertical cross section through the upper part of a container according to the invention with the lid partly fold up and with a carrying handle likewise fold up to its carrying position. Figure 4 shows a cross section through an alternative type of container unit, and figure 5 is an enlarged view of the encircled part of figure 4. Figure 6 is a fragmentary side view of an example of a container body for use in the invention, and figure 7 shows an alternative example of such a container body. Figure 8 illustrates, like in figure 1, a reclosable container top having an alternatively formed carrying handle. Figure 9 is a perspective view from above of a container having the reclosing top of figure 8 and shown with the carrying handle fold up, and figure 10 shows the same container with the carrying handle fold down along an outer side of the container body and with the lid fold up. Figure 11 is a vertical cross section through a part of a ready container having a type of mechanical locking between the reclosing top and the container body. Figures 12a and 12b shows, in two stages, the interconnecting of a container body to a reclosing top by means of an alternative mechanical locking means, and figures 13a, 13b and 13c shows, in three stages, a further alternative of a mechanical interconnecting of the container body to the reclosing top. Figure 14a and 14b diagrammatically and in a perspective view illustrates the mechanical locking of figure 13 with respect only to the container body. Figure 15 shows, like in figure 2, a vertical cross section through a reclosable container top in its manufacturing stage. Figure 16 illustrates how reclosing tops according to figure 15 can be piled interconnected to each other, and figure 17 is an enlarged view of the encircled part of figure 16. Figures 18 and 19 show a vertical cross section through a part of a reclosing top having a type of "kid-proof lock", and figures 20 and 21 illustrate two alternative types of kid-proof locks"

The reclosable container top shown in figures 1 and 2 generally comprises a lid frame part 1 and a lid part 2, which parts over one or more hinges 3 are rotatably connected to each other. A carrying handle 4 is connected to the lid frame part 1. The carrying handle 4 can be formed integral with the reclosing top and connected to the lid frame 1 at a connection place 5 which is, in this case, located generally at the centre of each short side of the frame 1.

The lid frame part 1 is of the known type which has an all around the frame extending, downwards facing U-shaped groove 6 into which an even, cross cut upper edge of a container sleeve 7 can be introduced and secured. For providing the mechanical locking between the lid frame 1 and the container sleeve 7, which

locking engagement is considered necessary according to the invention, a downwards directed neck 8 of the frame is formed with several, in this case twelve, radially outwards directed, point formed barbs 9 extending radially outwardly such a long distance that the point 10 thereof is located at, close to, or even past the outer side 11 of the groove 6. The barbs 9 are arranged to penetrate the material of the container sleeve 7, which material may be cardboard, a cardboard-plastic laminate, a suitable plastic material, or any similar material.

In the illustrated case the frame part also has a covering inner plane 12 having a tear strip 13 along which the inner plane 12 can be torn off.

The inner plane also is formed with a tearing ring 14 by means of which the inner plane is torn off, whereby the inner of the container is opened.

Further, the inner plane is formed with a scoop 15 which can be pressed out of the inner plane and can be used as a measuring means for the packed goods. The tear strip 13 may leave an obliquely extending scrapeoff edge 16 of the inner plane along which excess of the packed goods, for instance detergent, can be scraped off thereby giving a relatively accurate amount of goods in the scoop 15.

The lid 2 is of known type and can be fold down with an immersed edge in the frame part 1 thereby enabling at least a powder proof reclosing of the container. As indicated in figure 3 the container may, if desired, be formed with an inner sealing foil 17 which keeps the packed material 18 protected from moisture until the lid 1 is opened, the inner plane 12 of the frame is torn open, and the sealing foil 17 is torn or cut open.

Figures 4 and 5 show a container which is filled with goods 18 and which is formed with a reclosing lid the lid frame 1 of which is pressed down over an even cross cut upper edge of the container body 7, and in which the barbs 9 have cut themselves through the container sides and have fold out a flap 19 of said container sides and whereby the upper edges of the barbs 9 engage the support part 20 of the container located above said fold out flap 19 thereby providing a strong mechanical locking engagement between the container and the lid frame.

In some cases the container body 7 and the barbs 9 can be formed so that the barbs cut themselves through the container body material when the reclosable lid arrangement is pressed down over the upper edge of the container body. In case the container body is made of a harder material recesses 21 can be provided in the container body sides as shown in figure 6, which recesses as to shape size and location correspond to those of the barbs. Alternatively slots 22 can be provided in the container body sides as shown in figure 7. As previously mentioned it is, of course, also possible to combine the mechanical joint provided by the barbs with any type of glue joint, for instance in that glue, hot-melt or any similar material is provided in the frame groove 6 or along the upper edge of the container 7.

In figures 1-4 the carrying handle 4 is shown in the form of a resilient loop which is connected at the parts 5 of the lid frame, and which in its normal rest position extends round about half the container periphery. Said loop handle can be resiliently swung upwards as shown in figures 3 and 4.

Of course it is also possible to mount the handle rotatable about pins of similar means at the frame of the reclosing top.

Figures 8, 9 and 10 shows an alternative embodiment of the reclosing top, in which the carrying handle 4' is formed as a type of briefcase handle which is hinge connected to a long side of the frame 1. In the illustrated case also the upper part of the lid part 2 is formed with an immersed portion 23 into which the carrying handle can be fold down and can be locked by means of snap hooks 24. In figure 9 the container is shown with the lid closed but with the carrying handle 4' fold up to its carrying position. When the carrying handle 4' is fold down said handle locks the lid and makes it impossible to un-intentionally open the lid, thereby providing a sort of kid-proof locking of the container. When the container is to be carried the carrying handle 4' is fold up to the position shown in figure 9, and when the packed goods is to be portioned out the handle 4' is fold outwards-downwards to the container side, as shown in figure 10, whereupon the inner plane 12 is torn open, the scoop 15 is pressed out from the inner plane 12, and the desired amount of goods is taken out from the container. Thereafter the lid 2 is preferably closed and the carrying handle 4' is fold back so that it is kept locked by the snap hooks 24 on top of the lid 24.

Figure 11 shows an alternative possibility of providing a mechanical inter-engagement between the

container body and the container top. In this case the upper edge of the container body 7 is fold double, and the flap 25 which is fold inwards-downwards will, by its own resiliency, be pressed to the frame side above the barbs 9 thereby making a releasing of the container body from the container top impossible. Figure 11 also shows a method of providing a combined mechanical locking and glue locking. A string of glue 26 is put on the exterior side of the neck 8 before the container body is introduced in the top, and when the container body is thereafter introduced in the lid frame the container body pushes the glue 26 in front of itself thereby providing a glue joint 27 adjacent the upper edge of the container body and on the inner surface of the frame groove 6. A container formed accordingly gets a relatively good tightness even after the reclosing top has once been cut open.

Figure 12a shows an alternative mechanical locking system. In this case the outer surface 11 of the lid frame is formed with an inwardly directed resilient tongue 28 which by its resilient action slides into a groove 21 of the container body side. When the container is thereafter lifted the tongue is bent downwards and is being placed on top of the barb 9 as shown in figure 12b.

Figures 13 and 14 show a still further alternative mechanical locking, which solution is built on the known idea that the rounded corners of the container body are formed with a pair of parallel short slots. When the locking flaps 29 thereby formed are pressed radially inwards said flaps form inwardly facing, concave locks along the otherwise convex container sides.

Figure 14a shows the container before the locking flaps 29 have been pressed to the inner of the container body.

For the last mentioned mechanical locking there is used a frame in which the barb 9' is bent upwards and which forms a pocket 30 for the fold in locking flap 29.

Figure 13a shows how the container body according to figure 14a has been introduced in the frame groove 6'. Through a recess 31 of the frame above the barb 9' it is possible, by means of some type of tool, to make the locking flap 29 bow concavely to the inner of the container. This is illustrated in figure 13b. When the container is thereafter lifted in the reclosing top the locking flap 29 slides down in the pocket 30 and makes it impossible to release the container body from the reclosing top. This last mentioned step is shown in figure 13c.

The reclosing tops are manufactured in fold out positions as shown in figure 15, and the ready manufactured reclosing tops are thereafter closed to the position shown in figure 16. For facilitating the transportation and the handling of reclosing tops, especially for making it possible to lift several reclosing tops stacked into each other the frame part and the lid part are designed with corresponding shape so that they can be partly introduced into each other. The lid part 2 can be cup formed with a radially inwards directed flange 31 adjacent the bottom of the lid cup, and the frame part 1 can be formed with a corresponding groove 32, so that the parts 31 and 32 are being releasibly snap connected when reclosing tops are being piled on top of each other. The flange 31 and the groove 32 should be designed for such connection force as to allow a lifting of a large number of piled reclosing tops by seizing the uppermost reclosing top, but still so that the reclosing tops can easily be released from each other mechanically of manually in the packing machine in connection to applying of a reclosing top to a container body.

Alternatively the flange can be formed in the frame part and the groove in the lid part. Figure 17 is an enlarged view of the above described snap engagement means between piled reclosing tops.

In the reclosing top shown in figures 16 and 17 the space for the portioning scoop is formed in the lid part rather than in the frame part as in figures 1-10.

In many cases it is important that a container can not be opened unintentionally, for instance by kids, and to this end the reclosing top is preferably formed with some type of "kid-proof lock", e.g. as illustrated in figures 18-21.

In the embodiment of figure 18 the lid part 2 is formed with an edge 33 projecting outside the lid frame 1. The overhanging edge 33 has an open, bore-like recess 34, and the lid frame has a corresponding spring pin 35 which, when the lid is closed, extends through the open recess 34 and engages the top surface of, and outside the bottom rib 36 of the overhanging lid edge 33 thereby making it impossible to open the lid.

For opening the lid it is necessary to push the spring pin 35 of the frame 1, as indicated with the arrow of figure 18, so that said pin 35 runs free of the bottom rib 36 of the bore-like recess 33. The lid is shown opened in figure 19, and the position of the spring pin 35 in its pressed-in position is shown with the dotted lines. When the lid is thereafter closed the spring pin 35 snaps past the bottom rib 36 of the recess 33 and locks the lid. The spring pin 35 can be formed with such strong resiliency that at least not small kids are capable of pressing said pin far enough for opening the lid.

Figure 20 shows an alternative solution of the kid-proof locking problem. In this case the frame is formed with a solid pin 37 extending straight up through a recess 38 at the upper edge of the lid frame. Said pin 37 is formed with a spring 39 extending downwards from the upper edge of the pin 37, which spring engages outside the recess. As indicated with the dotted lines the solid pin 37 may be formed with a spring on both sides thereof, whereby there is obtained a double acting spring lock. Both springs have to be compressed concurrently for releasing and opening of the lid.

Figure 21 shows another type of kid-proof lock, in which the pin 40 is resilient and has a spring 41 on one side thereof. The recess 38 is so deep that the pin 40 can be bowed some distance backwards from the front edge of the recess 38, and for opening the lid this is done at the same time as the spring 41 is compressed. The spring 41 can be arranged for being bowed backwards as shown in figure 21, but it may alternatively be arranged for being bowed forwardly. In the latter case the spring 41 has to be provided on the rear side of the pin 40 rather than on the front side as shown in figure 21.

#### Reference numerals

1 frame part  
 2 lid part  
 3 hinge  
 4 carrying handle  
 5 connection place  
 6 groove (of 1)  
 7 container sleeve  
 8 neck  
 9 barb 10 point (of 9) 11 outer side (of 6) 12 inner plane 13 tear strip 14 tear open ring 15 scoop 16 scraper edge 17 sealing foil 18 packed material 19 flap 20 support part (of 7) 21 recess 22 slot 23 immersed part (of 2) 24 snap hook 25 flap 26 string of glue 27 glue joint 28 tongue 29 locking flap 30 pocket 31 flange (of 2) 32 groove (of 1) 33 edge 34 recess 35 spring pin 36 bottom rib (of 34) 37 solid pin 38 recess 39 spring 40 spring pin 41 spring

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